

REMARKS

Applicants have amended the claims as set forth above to better define the invention. Applicants respectfully traverse the rejection of the claims and respectfully request reconsideration. A two month extension of time is enclosed. Please charge the fee of \$210 and any additional fees to Bracewell & Patterson Deposit Account No. 50-0259 (0838CG.044455).

This invention has a number of significant features that are not shown in the references. Referring to Figure 3, one feature comprises a crescent-shaped exhaust shroud 14 surrounding each torch 16. Another feature comprises the exhaust hose handling arrangement. As shown in Figure 1, hose 28 is flexible and is carried by a plurality of rollers 48 when the gantry 20 moves from the forward end to the rearward end. Rollers 48 roll along a track to support the hose as the hose moves with the gantry.

Claim 1, as amended, requires an exhaust shroud that has a hollow, crescent-shaped body with intake and exhaust ports. The claim requires that the body have a base and two spaced apart free ends with an opening between the free ends to provide access to the torch. Lindkvist shows dome-shaped hoods around each torch D. Referring to Figure 5, the hood has an outer member 19 and an inner member 20 located within the outer member. The exhaust flows up the annular space between the inner and outer members to exhaust conduit 21. The torch extends through opening 22. A visor 23 can be opened to provide access to the torch.

Lindkvist does not disclose a crescent-shaped torch with free ends and a space between them to provide access to the torch. The crescent-shaped body has significant advantages. As can be seen in Figure 1, the torch 12 and its tip 16 are entirely open to allow a user to change them without removing the exhaust shroud. The visor 23 of Lindkvist provides some access to the tip, but the access is clearly limited. Also, it is possible for such visors to corrode and stick.

Having a large space between free ends, as in Applicants' crescent-shaped enclosure, provides much greater accessibility.

Even though the enclosure is not fully annular, Applicants are able to achieve uniform suction around the torch. If unequal, the suction could deflect the torch flame in lateral directions, which can affect the precision of the cut. Applicants submit that a crescent-shaped torch with two spaced-apart free ends to define a slot for the torch is unobvious over the dome-shaped enclosure of Lindvkist.

Blackmon discloses a gantry that moves but has no exhaust system mounted to it. Rather, the exhaust system is mounted below the table and comprises down draft container 76, 78, duct 84 (Figure 2) and blower 86, which discharges the fumes out through duct 84. There is no suggestion whatsoever concerning a crescent-shaped exhaust shroud.

Claim 4 depends from claim 1, and specifies that the body has a flow area that gradually increases from the free ends to the base. Referring to Figure 3, note that the flow area between the bottom 41 and top 42 and the outer side 39 and the inner periphery of top 34 is smallest at free end 35. The flow area gradually increases up to the central base area. Increasing the flow area allows for more even distribution of exhaust flow. The smallest portion, near the free ends 35 has lesser suction pressure than in the larger base or central area because it is farthest from the output port. The increase in flow area tends to balance the velocity of fumes drawn into the intake ports all along the shroud from the free ends to the central base area. The fumes picked up near free ends 35 must travel back along the leg portions to the base 37, thus the flow volume increases from the free ends 35 to the base. The flow area increases to accommodate the increase in volume. The examiner cited no references concerning increasing the flow area free ends 35 to base 37.

Claim 5 depends from claim 1, requiring that the intake port be located on the lower surface. This is illustrated in the embodiment of Figure 3, with intake ports being ports 33a. The shroud of Lindkvist does not have arcuate inner or outer surfaces, rather the inner or outer surfaces are cylindrical. It does not disclose a lower surface having an intake port. Claim 6 depends from claim 1, requiring that the intake ports be at the inner arcuate surface of the body, the intake ports being separated by baffles within the enclosure. This embodiment is illustrated in Figure 3 of the application. The inner arcuate surface comprises the edges of the bottom 41 and top 42. The intake ports 36 are defined by baffles 38. Lindkvist does not show any such arrangement. The baffles provide for a uniform and efficient intake of fumes from the torch and are an important part of the invention claimed in claim 6.

Claim 7 specifies that the intake port comprises an arcuate inner opening, which is shown in Figure 3. Claim 8 requires that the body have an upper surface and a lower surface, the upper and lower surfaces joining the free ends of the base. It requires that the upper and lower surfaces diverge from each other from the free ends to the base. This arrangement provides greater flow area volume in the body from the free ends to the base. An increasing flow area is not shown or suggested in the references. Claim 9 depends from claim 1, and specifies that the body of the exhaust shroud have an upper surface and a lower surface that increase in width measured from the free ends to the base. The increasing width can be seen in Figure 3, with the width of upper surface 42 being the narrowest at free ends 35 and the widest at base 37. This feature provides greater volume as the exhaust proceeds downstream and provides more efficient fluid flow.

Referring to Figures 5-11 for convenience, claim 10 requires a track 46 alongside the table. It requires a roller 50 for rolling movement along the track. It requires a wheel 48 rotationally attached to the roller for movement along the track. It requires a cable loop 66

attached to the input and output ends of exhaust hose 28. Wheels 48 support exhaust hose 28 as it is pulled by the gantry toward the rearward end as can be seen by comparing Figures 5 and 6. Wheels 48 move along the table as the gantry moves. Cable loop 66 is important because it avoids excessive stretching of the hose as the cable pulls wheels 48 along track 46. Neither reference suggests any of these features. Claim 11 also requires a track, a plurality of rollers 50 and a plurality of wheels 48. It requires a cable loop 66 attached to the ends of the exhaust hose.

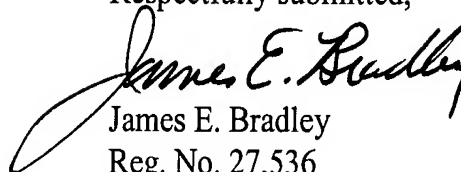
Claim 12 is an independent claim that requires an exhaust shroud enclosure having a base and two free ends that are separated from each other to provide access to the torch cutter. It requires a plurality of input ports along the enclosure from the free ends to the base. As previously discussed, the references do not show this type of enclosure. The enclosure has significant advantages over the dome-shaped hoods of the prior art, thus this claim should be allowed. Dependent claims 13-17 deal with specific features of the enclosure generally as discussed above in connection with the other dependent claims.

Claim 18 requires an exhaust hose, a track, a plurality of rollers, and a plurality of wheels. Claim 18 also requires space bars, which are the bars 62 shown in Figure 6 that keep the spacing between the wheels 48a, 48b, and 48c at fixed distances. This claim also requires a cable loop. The references do not suggest this claim whatsoever.

Claim 19 requires supporting the exhaust hose with a set of wheels rotationally mounted to a set of rollers, the rollers being spaced at a fixed distance apart and free to travel on a track. Claim 19 is not suggested in the references. Claim 20 depends from claim 19, requiring the use of a cable loop.

It is respectfully submitted that the claims are now in condition for allowance and favorable action is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James E. Bradley", is written over the typed name.

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